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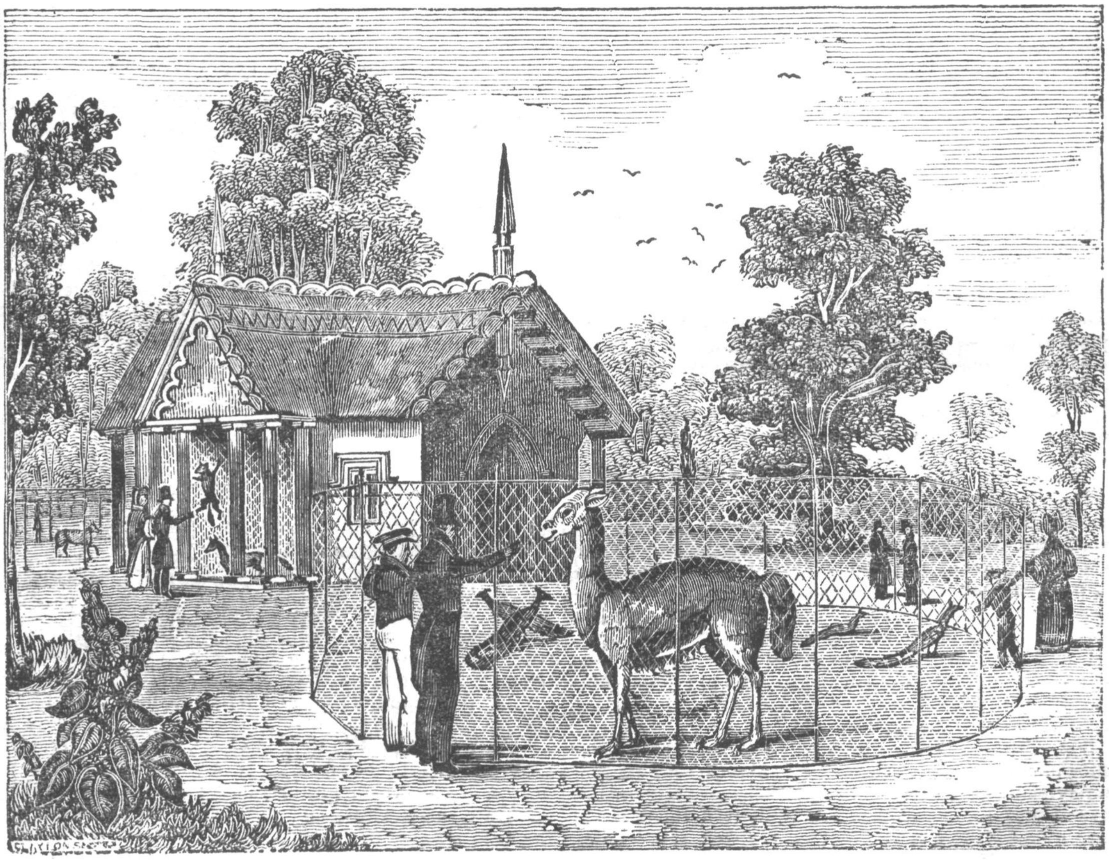
ever quarrelled more. With as noble a heart as ever beat in bosom, Charley was hot and revengeful; and as he never was one who calculated on the consequences of an act, it was not likely he should submit to Willy Hervey, favourite as he was, giving him the lie to his face, which he did one afternoon as they quarrelled about some trifle not worth mentioning. Accordingly, without any further consideration, he struck him a violent blow in the face. Astonishment, I think, was the first feeling that possessed Hervey at the little ceremony he had been treated with. He was not long, however, in collecting his scattered senses, and reporting the whole affair, wofully exaggerated. Nothing could exceed Conny's rage. He refused to listen to any thing, and at once sentenced poor Charley to a flogging. In vain the culprit urged the provocation he had received—Muny was deaf to his defence. The truth was, he had a long score against him, which he wished much to have cleared. At length Charley, finding his appeal was vain, and that, birch in hand, Muny was about to put his threat in execution, seized a leaden ink-bottle that accidentally stood near, and flung it with all his force at the pedagogue's head. Fortunately for him, Charley was what might be technically called a "*bad shot*;" and instead of splitting Conny's head, as he had intended, the leaden engine came in contact with the corner of a desk, and bounding in a tangent from that, struck poor Nelson's nose, which just at that time was wriggling in a more violent degree than ordinary, he being engaged in calculating the value of $+x-x$ produced to eternity. Without waiting to apologize for the mischief he had involuntarily committed, Charley snatched his hat from the rack, and was preparing to make his escape; but fate ordained it otherwise—in his haste he tripped, and tumbled down the flight of stairs that led from the school-room. Though not materially hurt, he was stunned by the fall, and, before he could recover himself, was captured, and received a most severe castigation, as a warning against drubbing favourites, and discharging leaden ink-bottles. I really was so disgusted with the whole affair, that the following morning, having previously written to my grandfather, and without taking leave, as I hate ceremony, I bade adieu for ever to Foxtown seminary. F. W.



LAMAS.—VIEW IN THE ZOOLOGICAL GARDENS.

THE LAMA.

This animal stands high upon its legs, has a long neck, a small head, and resembles the camel, not only in its natural mildness, but its aptitude for servitude, its moderation, and its patience. The Americans early found out its useful qualities, and availed themselves of its labours: like the camel, it serves to carry goods over places inaccessible to other beasts of burden; like that animal, it is obedient to its driver, and often dies under, but never resists his cruelty.

Of the lamas, some are white, others black, but they are mostly brown; the face resembles that of the camel, and the height is about equal to that of an ass. They are not found in the ancient continent, but entirely belong to the new; nor are they found spread over all America, but are found chiefly upon those mountains that stretch from New Spain to the Straits of Magellan. They inhabit the highest regions of the globe, and seem to require purer air than animals occupying a lower situation. Peru seems to be the place where they are found in greatest plenty. They go but slowly—seldom above fifteen miles a day; their tread is heavy, but sure; they descend precipices, and find footing among the most craggy rocks, where even men can scarcely accompany them. They are, however, but feeble animals, and, after four or five days' labour, they are obliged to repose for a day or two.

The lama is above three feet high, and the neck is three feet long; the head is small and well proportioned, the eyes large, the nose long, the lips thick, the upper divided, and the lower a little depending; like all those animals that feed upon grass, it wants the upper cutting teeth; the ears are four inches long, and move with great agility; the tail is but five inches long—it is small, straight, and a little turned up at the end; it is cloven-footed, like the ox, but it has a kind of spear-like appendage behind, which assists it in moving over precipices and rugged ways; the wool on the back is short, but long on the sides and the belly. Like the camel, it has the faculty of abstaining long from water, (sometimes four or five days); and, like that animal's, their food is coarse and trifling. They are neither allowed corn nor hay; green herbage, of which they eat very moderately, being sufficient for their nourishment.

CATECHISM OF BOTANY.*

This is a plain, simple, well-written little book, much on the plan we have taken occasion from time to time to recommend to those writing or compiling works professedly for the instruction or information of the younger classes of the community. It is not a mere dry catalogue or detail of scientific names and observations. It gives in a very limited compass a general view of the structure of plants, and the peculiarities of vegetable life. Indeed we quite agree with the author, that "the mere knowledge of the names of plants, and the orders to which they belong, without investigating further, is learning but as it were the first alphabet of botany; and unless it be studied in connexion with the other departments of nature, and in relation to the structure, and economy, and uses of plants, it can be accounted as little else than a mere pastime. The vegetable kingdom, however, thus investigated, will be found to possess as deep and pleasing an interest as any other department of the wonderful works of nature."

By a reference to the 153d number of our Journal, the reader will find a brief outline of the principal elements of botany. The following, which we have picked out here and there from the little work before us, will serve to explain or elucidate some of the terms and observations there brought forward:—

"Q. How is the stem of woody plants formed?

"A. The stem consists of an outer skin or cuticle; of a soft, pulpy, or herbaceous matter; of the liber or bark; of alburnum and wood; and of the central pith or medulla.

"Q. What is the cuticle?

"A. The outer skin or cuticle is found in all plants, and serves to protect the soft parts beneath from injury. It is generally thin, tough, and transparent. It gives support to the hollow stems of reeds and grasses, and in the bamboo it is found to contain a considerable portion of flint. The same substance gives firmness to the stalks of oats and wheat.

"Q. What is found next to this outward skin?

"A. Immediately below the skin is a green, soft, pulpy, and juicy substance, called the herbaceous or cellular integument. It forms the cork of the cork-tree.

"Q. Where is the bark situated?

"A. The *liber*, *cortex*, or bark, is situated under this soft pulpy matter. It consists of a fibrous network, minutely plaited together; and, having been formerly used as a substitute for paper, hence was derived the name of *liber*, a book. This bark contains the oils, resins, gums, &c. found in various trees.

"Q. What is the *cambium*?

"A. The *cambium* is a juice which comes from the inner part of the bark, and which serves to repair wounds and loss of substance in plants. By forming the alburnum, it gradually increases the bulk of stems.

"Q. Where is the *alburnum* situated?

"A. The *alburnum*, or false wood, is the outer layers of softish substance seen when the bark is peeled off. It is at first soft and juicy, but gradually hardens into wood.

"Q. How are those circular rings formed which are seen when a piece of wood is cut across?

"A. Those rings are the successive layers of the *alburnum*, one of which is consolidated into wood every year. Thus the age of a tree may be known by counting the number of circles in the wood.

"Q. What is the colour of wood?

"A. It is of various colours, as white, red, black, &c. according to the kind of tree.

"Q. What is the pith or marrow?

"A. The pith is the soft spongy substance which forms the centre of the stem. It is more juicy in young shoots and plants than in old, and is seen of large size in the elder-tree.

"Q. How do the stems of plants increase in height?

"A. The palm tribe, reeds, and similar plants, grow from the top, tube after tube shooting downward in succession, as in the bamboo, in oats and in other grains. The oak and similar trees grow by circular layers added to the breadth of the stem beneath the bark, and forming cone within cone in yearly succession.

"Q. Do plants grow quickly?

"A. In warm climates palms and canes have been ascertained to grow twelve inches in twenty-four hours, and shoots of corn in our warm summers spring up with amazing rapidity. The *agave Americana* has been seen on the shores of the Mediterranean to shoot out, when in flower, a stalk of thirty-one feet high, in thirty or forty days, thus growing nearly one foot in a day. Other trees, again, as the oak and elm, are of very slow growth, but in the course of ages gradually acquire a prodigious bulk.

"Q. What is the greatest height to which trees will grow?

"A. Palms in America have been found growing to the height of 150 feet, and a species of pine (*Pinus Lambertiana*) to 250 feet. The greatest height of trees in Europe is from 120 to 130 feet; and the oak, elm, and cedar have attained to 25 and 30 feet in circumference.

"Q. Of what use are the leaves of plants?

"A. The leaves of plants may be compared to the lungs of animals. They absorb or take up the air of the atmosphere, which enters into combination with their juices, and thus contributes to the life and growth of the plant. They also absorb or give out moisture according as the plant requires it.

"Q. What is the structure of leaves?

"A. Leaves are formed of a framework of fibres, intimately netted together, between which is a soft pulpy substance, like the herbaceous membrane of the stem; the whole is covered and protected by a thin porous skin. In the centre of the leaf runs the mid rib or middle nerve, by which the leaf is connected with the stalk. Sometimes there is a leaf stalk called *petiole*; at other times it is wanting, when the leaf is said to be *sessile*.

"Q. How are leaves named with respect to their tip?

"A. They may be *obtuse*, or blunt; *acute*, or pointed; *acuminate*, with a long taper point; *abrupt*, when the end seems as if cut off; *notched*, ending with a small notch; *retuse*, terminated by a broad shallow one.

"Q. What are the principal terms applied to the margins?

"A. With respect to their margins, leaves are termed *entire* when destitute of teeth or notches on the edges; *toothed*, having small protuberances; *serrated*, when the teeth are sharp, close, and directed towards the end of the leaf; *crenate*, or notched, when the teeth are broad, and not directed towards either end; *fringed*, bordered with hairs; *thorny*, with thorns or spines on the margin.**

"Q. What part of the air do plants absorb?

"A. The leaves of plants decompose carbonic acid gas, —give out its oxygen, and retain the carbon. During night, when the sun is absent, plants are supposed to give out carbonic acid; in sunshine they give out oxygen or vital air.

"Q. Does light seem necessary to vegetables?

"Yes; the leaves of plants are always turned to the light. Some leaves fold themselves up during the night, and again expand at sunrise. * *

"Q. What are the other parts of plants?

"A. The other most remarkable parts of plants are the flowers or blossoms, containing the organs by which seeds are produced for the propagation of the species.

"Q. Is there any similarity in this respect between plants and animals?

"A. There is this remarkable similarity, that many plants are, like animals, male and female. In some plants, as the common palm, all the blossoms of one tree are

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* A Catechism of Botany; or, Natural History of the Vegetable Kingdom. By William Rhind. Edinburgh; Oliver and Boyd.